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(71) Applicant(s)
Lucent Trans Electronic Co Ltd
 (Incorporated in Taiwan)
 9F-1 No.16 Chien Pah Road, Chungho City,
 Taipei Hsien, Taiwan

(72) Inventor(s)
Chin-Hung Cheng

(74) Agent and/or Address for Service
Lewis & Taylor
 144 New Walk, LEICESTER, LE1 7JA, United Kingdom

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(56) Documents Cited
GB 2337394 A **DE 029922706 U**
US 6032910 A **US 5828966 A**
US 5479486 A

(58) Field of Search
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 INT CL⁷ **B60R 11/02 , H01M 10/46 , H02J 7/00 , H04M**
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(54) Abstract Title
Battery charging stand for mobile phone

(57) A battery charger for cellular phone comprises a holder 1 with a cellular phone port 11, a contact terminal 31 on the cellular phone port and a circuit board with charging circuitry tied to the connector. The battery of cellular phone can be charged while cellular phone is in the cellular phone port. Two bendable stretching arms 12, are respectively mounted on the upper sides of the holder, users can adjust the bendable stretching arms to fit different kinds of cellular phones based on different sizes. One LED indicator 4a,4b at the end of each bendable stretching arm is used as an indication for end of battery charging and incoming calls. A power cord 52 can be arranged around a winding reel for smaller size, thereby making the whole charger easier to for storage and carrying.

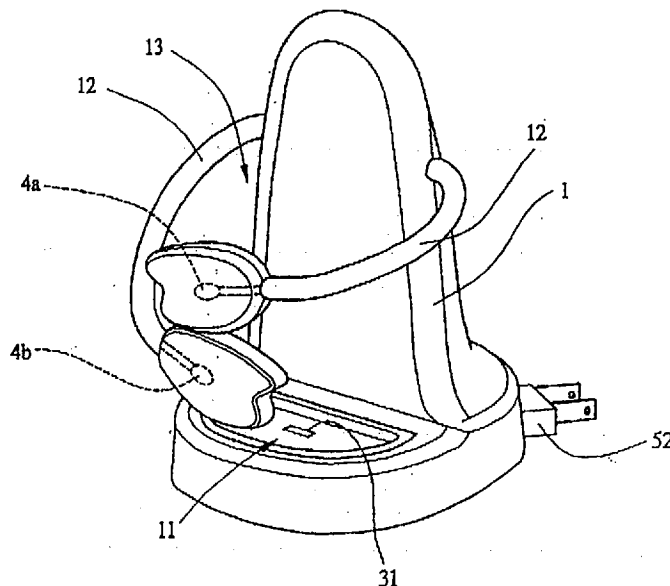


Fig.1

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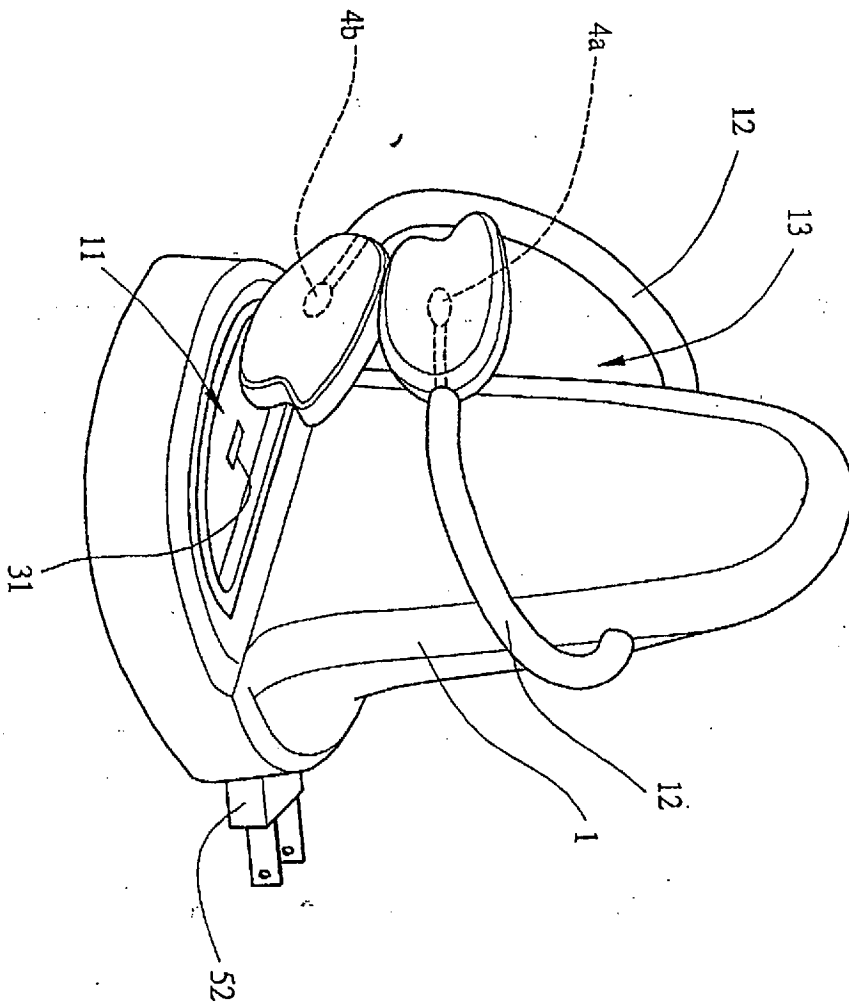


Fig.1

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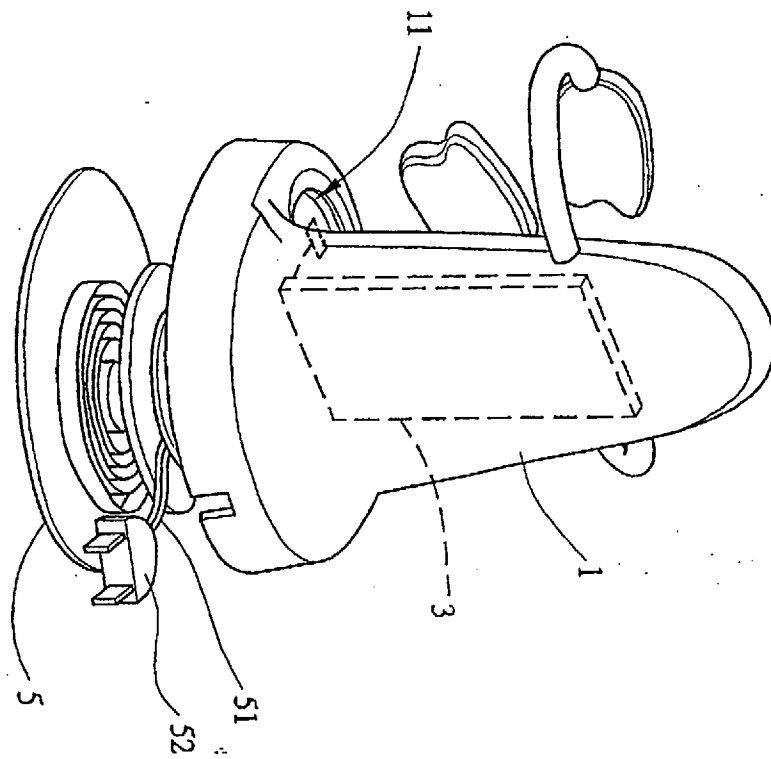


Fig.2

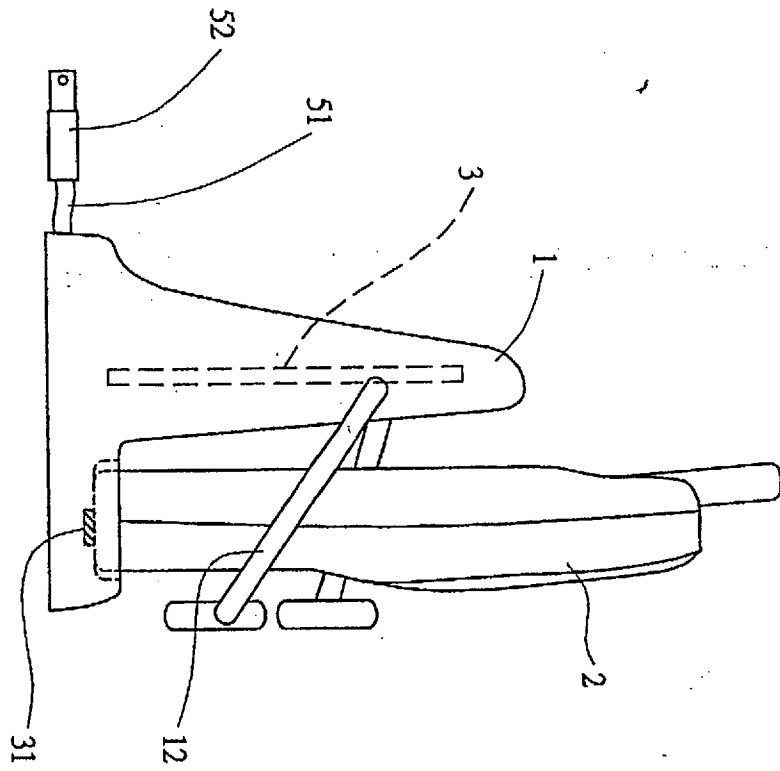


Fig.3

BATTERY CHARGER FOR A CELLULAR PHONE

BACKGROUND OF THE INVENTION

5 I. Field of the Invention

This invention relates generally to a battery charger for a cellular phone and, more specifically, to a battery charger for a cellular phone that charges the battery of a cellular phone while the cellular is in stand-by mode. The LED indicators on the battery charger indicate different statuses: completion of battery charging or incoming phone. A winding reel
10 on the bottom of holder makes power cord easy for use and storage.

II. Description of the Prior Art

With the availability of cellular phone, almost everyone has a cellular phone; therefore, anybody can be reached anywhere and anytime. It is very convenient. The cellular phone has
15 battery as power source, and battery must be charged when out of power or the cellular phone is useless. However, most of the batteries, when charged, have to be removed from cellular phone first and placed on the battery charger, and the cellular phone is unusable at that time unless a backup battery is applied. While indoors, the cellular phone is generally placed on desk, users tend to forget its whereabouts. It is more convenient to have a small rack
20 especially for the cellular phone. Most of the racks for the cellular phone are without battery charger, if battery power wears out and not known, users might miss important calls.

Power cord of cellular phone battery charger is normally a straight wire, it needs to be folded or wound into smaller size for storing and moving around. However, general users
25 will just put the battery charger and power cord into a drawer such that the power cord is easily commingled with others that cause mess and inconvenience when it is taken out next time.

SUMMARY OF THE INVENTION

5 It is therefore a primary object of the invention to provide a battery charger for a cellular phone comprising a holder with a cellular phone port, a contact terminal on the cellular phone port, a circuit board with charging circuitry tied to the connector. The battery of cellular phone can be charged while cellular phone is in the cellular phone port.

10 It is another objective of this invention to provide a battery charger for a cellular phone with one bendable stretching arm on both upper side of the holder while users can adjust the bendable stretching arms to fit different kinds of cellular phones based on different sizes. One LED indicator is fitted to the end of each bendable stretching arm for indication of completion of battery charging and incoming calls.

15 It is still an objective of this invention to provide a battery charger for cellular phone containing a winding reel at the bottom of holder, power cord can be arranged around the winding reel for smaller size makes the whole charger easier to store and carry.

BRIEF DESCRIPTION OF THE DRAWINGS

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The accomplishment of the above-mentioned object of the present invention will become apparent from the following description and its accompanying drawings which disclose illustrative an embodiment of the present invention, and are as follows:

25 FIG 1 is a perspective view of the present invention;
FIG 2 is a cross-sectional view of an embodiment of the present invention; and
FIG 3 is a physical illustration of the present invention.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring to FIG 1 and FIG 2, the present invention is composed of a holder 1, a cellular
5 phone port 11, a bendable stretching arm 12 on both upper sides of holder 1; the two
bendable stretching arm 12 form a receiving space 13 for cellular phone 2, as shown on FIG
3. A circuit board 3 is inside holder 1 containing battery charging circuitry, incoming call
sensing circuitry and signal processing circuitry. The cellular phone port 11 mentioned above
has a contact terminal 31 which is connected to battery charging circuitry and signal
10 processing circuitry on the circuit board 3. Two LED indicators 4a and 4b also connected to
the circuit board 3 are placed on the end of two stretching arm 12. A winding reel 5 is
equipped on the bottom of holder 1; a main power cord 51 is connected to circuit board 3 and
wound on the winding reel 5 at the bottom of the holder 1.

15 Based on above description, it is very easy to charge the battery, first place cellular
phone 2 to the contact terminal 31 of cellular phone port 11, plug in the plug 52 of main
power cord 51 to power outlet (not shown). The cellular phone 2 in stand-by mode can
remain on the base 1 for charging so that the battery won't be worn out.

20 The two stretching arm 12 on base 1 are bendable, there they can be adjusted for
different kinds of cellular phone 2. The LED indicators 4a and 4b connected to and
controlled by circuit board 3 can light up (not flash) when finish battery charging to remind
the users. The LED indicators 4a and 4b also connect to the incoming call sensing circuitry
on the circuit board 3. When the cellular phone 2 receives incoming call, the LED indicators
25 4a and 4b flash to remind the users. The color of the light for incoming calls is different from
that for finishing charging.

A power cord 51 can be arranged around to the winding reel 5 on the bottom of the holder 1 for smaller size, thereby making the whole charger easier for storage and carrying.

While a preferred embodiment of the invention has been shown and described in detail, it will be readily understood and appreciated that numerous omissions, changes and additions
5 may be made without departing from the spirit and scope of the invention.

CLAIMS

1. A battery charger for a cellular phone comprising:

5 a holder having a cellular phone port while two bendable stretching arms are disposed above said cellular phone port on said holder 1, thereby forming a receiving space for said cellular phone;

a circuit board disposed inside said holder and provided with a battery charging circuitry, an incoming call sensing circuitry and a signal processing circuitry while said cellular phone port has a contact terminal which is connected to said battery charging circuitry and said
10 signal processing circuitry; and

two LED indicators connected to said charging circuitry and said signal processing circuitry of said circuit board and installed at the end of each said bendable stretching arm for indication of completion of battery charging and incoming calls;

a winding reel located at the bottom of said holder, power cord connected to said circuit
15 board being wound on said winding reel so that said power cord is collected in a wound way to the bottom of said holder.

2. A battery charger for a cellular phone substantially as herein described with reference to and as illustrated in the accompanying drawings.



INVESTOR IN PEOPLE

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Claims searched: All

Examiner: Rowland Hunt
Date of search: 7 September 2001

Patents Act 1977 Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:
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Int Cl (Ed.7): B60R 11/02; H01M 10/46; H02J 7/00; H04M 1/02, 1/04, 1/11, 1/21
Other: Online: EPODOC, JAPIO, WPI

Documents considered to be relevant:

Category	Identity of document and relevant passage	Relevant to claims
A	GB 2337394 A (YAHIA)	
A	DE 29922706 (TEMPA)	
A	US 6032910 (RICHTER)	
A	US 5828966 (DAVIS et al.)	
A	US 5479486 (ROHM)	

6

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.